MC 87-I-28C(P)

PRELIMINARY REPORT
INDUSTRY SERIES

1987

Census of Manufactures

MC87-I-28C(P)
Issued May 1989

DRUGS

Industries 2833, 2834, 2835, and 2836

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.[1]

INDUSTRY 2833, MEDICINALS AND BOTANICALS

In the 1987 Census of Manufactures, Industry 2833, Medicinals and Botanicals, had employment of 11.6 thousand. The employment figure was 35 percent below the 17.8 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was $3.3 billion.

In 1987, establishments in this industry accounted for 70 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). In 1982, the coverage ratio was 74. The products primary to this industry appear in table 2 and aggregated to $4.2 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.6 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2834, PHARMACEUTICAL PREPARATIONS

In the 1987 Census of Manufactures, Industry 2834, Pharmaceutical Preparations, had employment of 131.5 thousand. The employment figure was 6 percent above the 124.4 thousand reported in 1982. Compared with 1986, employment in 1987 increased 6 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $32.1 billion.

In 1987, establishments in this industry accounted for 97 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). In 1982, the coverage ratio was 96 percent. The products primary to this industry appear in table 2 and aggregated to $26.5 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $8.5 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2835, DIAGNOSTIC SUBSTANCES

In the 1987 Census of Manufactures, Industry 2835, Diagnostic Substances, had employment of 14.1 thousand.

[1]**Standard Industrial Classification Manual: 1987.** For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **Andy Hait** (301) 763-2510.

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The total value of shipments for establishments classified in this industry was $2.1 billion.

In 1987, establishments in this industry accounted for 67 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $2.6 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $617.3 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2836, BIOLOGICAL PRODUCTS, EXCEPT DIAGNOSTIC

In the 1987 Census of Manufactures, Industry 2836, Biological Products, Except Diagnostic, had employment of 12.8 thousand.

The total value of shipments for establishments classified in this industry was $1.6 billion.

In 1987, establishments in this industry accounted for 74 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $1.7 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $666.4 million in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

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Census/ASM		
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Nondurables	Michael Zampogna	(301) 763-2510
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Import/Export Publications	Foreign Trade Division	(301) 763-5140
Industry Analysis and Forecasts	International Trade Administration	(202) 377-4356

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
INDUSTRY 2833, MEDICINALS AND BOTANICALS															
1987 Census	(NA)	223	94	11.6	377.6	6.1	11.9	184.2	1 781.5	1 611.0	3 348.2	114.1	491.6	91	70
1986 ASM	(NA)	(NA)	(NA)	15.8	497.6	8.3	16.6	234.0	1 854.9	1 285.0	3 153.1	147.2	560.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	15.7	497.5	8.6	17.5	238.1	1 970.8	1 296.4	3 282.9	170.0	570.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	17.3	497.5	9.5	18.0	225.0	1 992.4	1 446.8	3 410.3	260.8	695.4	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	17.7	472.0	9.8	19.0	230.6	2 057.5	1 287.2	3 370.6	273.9	598.2	(NA)	(NA)
1982 Census	210	228	94	17.8	463.2	10.2	20.9	228.8	2 054.7	1 335.2	3 397.9	283.6	626.3	83	74
1981 ASM	(NA)	(NA)	(NA)	17.4	421.0	10.2	20.4	218.5	1 843.0	1 467.8	3 267.2	220.9	630.0	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	338.0	9.1	18.3	181.5	1 572.1	1 272.7	2 809.3	152.7	487.1	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	14.6	274.0	8.4	17.3	148.7	1 356.6	1 032.2	2 351.7	149.3	417.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	14.6	242.3	8.3	17.3	133.0	1 166.1	864.7	1 984.9	127.2	357.5	(NA)	(NA)
1977 Census	154	177	76	14.4	219.9	8.4	17.1	127.2	1 162.2	739.0	1 889.9	123.8	307.0	82	68
1976 ASM	(NA)	(NA)	(NA)	14.1	194.9	7.7	15.5	107.4	912.5	617.9	1 532.6	130.3	291.4	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	13.5	172.9	7.6	15.2	97.1	677.9	523.0	1 181.6	110.3	299.1	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	12.8	162.5	7.7	16.6	98.6	656.0	485.2	1 093.6	70.7	270.6	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	8.2	97.3	4.8	9.6	51.9	386.7	277.0	650.3	28.2	135.8	(NA)	(NA)
1972 Census	127	140	51	7.8	80.8	4.6	8.7	44.9	260.0	251.9	509.0	51.5	116.0	87	51
INDUSTRY 2834, PHARMACEUTICAL PREPARATIONS															
1987 Census	(NA)	718	360	131.5	4 164.8	59.8	117.2	1 454.7	23 868.3	8 455.3	32 069.7	1 470.4	3 897.2	90	97
1986 ASM	(NA)	(NA)	(NA)	124.2	3 780.3	58.7	113.5	1 361.6	20 597.9	7 661.4	28 179.3	1 057.8	3 396.0	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	123.0	3 595.4	58.4	111.8	1 297.1	19 094.7	6 417.8	25 335.3	1 171.1	3 229.6	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	123.8	3 367.1	59.7	111.0	1 216.6	16 922.6	6 169.9	22 887.6	1 060.0	2 990.6	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	123.7	3 173.7	61.9	117.6	1 201.3	15 476.4	5 898.8	21 222.0	833.9	2 818.1	(NA)	(NA)
1982 Census	584	683	332	124.4	3 052.5	62.2	120.0	1 163.4	13 484.0	5 529.8	18 997.6	861.2	2 616.9	89	96
1981 ASM	(NA)	(NA)	(NA)	130.5	2 918.1	64.8	125.6	1 114.7	12 058.7	5 531.9	17 503.2	729.3	2 577.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	135.3	2 734.9	68.4	125.5	1 037.6	11 048.1	4 751.0	15 638.8	674.5	2 491.5	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	130.0	2 370.5	66.7	125.8	932.1	9 714.0	4 202.4	13 738.0	595.3	2 272.4	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	129.6	2 272.4	64.0	126.7	861.6	9 039.3	3 848.8	12 797.8	491.5	2 025.5	(NA)	(NA)
1977 Census	655	756	293	126.4	2 029.5	63.1	123.1	779.4	8 214.4	3 394.2	11 459.4	419.3	1 892.6	86	97
1976 ASM	(NA)	(NA)	(NA)	124.0	1 849.5	62.1	120.6	712.2	7 975.1	2 924.0	10 764.6	309.2	1 726.9	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	122.8	1 701.9	60.2	115.5	634.7	6 923.1	2 481.7	9 387.8	321.4	1 523.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	120.7	1 539.4	60.6	118.4	593.4	6 404.6	2 188.7	8 412.3	278.1	1 485.9	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	120.9	1 384.2	60.5	119.0	555.1	5 986.2	1 897.7	7 711.8	207.2	1 121.7	(NA)	(NA)
1972 Census	679	756	312	112.0	1 229.7	57.0	113.2	497.7	5 639.5	1 575.8	7 149.5	166.7	966.1	87	97
INDUSTRY 2835, DIAGNOSTIC SUBSTANCES[5]															
1987 Census	(NA)	156	96	14.1	391.8	8.7	13.4	144.5	1 466.2	617.3	2 082.9	92.9	359.0	91	67
INDUSTRY 2836, BIOLOGICAL PRODUCTS, EXCEPT DIAGNOSTIC[5]															
1987 Census	(NA)	212	103	12.8	314.3	6.5	11.7	105.6	926.8	666.4	1 588.8	69.9	345.8	87	74

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 2833, 6%; SIC 2834, 3%; SIC 2835, 5%; and SIC 2836, 12%.

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Includes establishments with payroll at any time during year.

[4]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

[5]Industry definition is new for 1987 Census of Manufactures. An explanation of the Standard Industrial Classification revision will appear in the final industry series text that supercedes this report.

Table 2. Product and Product Classes—Value of Shipments by All Producers: 1987 and 1982

[Includes value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987 Number of companies with shipments of $100,000 or more	1987 Value of product shipments[1] (million dollars)	1982 Number of companies with shipments of $100,000 or more	1982 Value of product shipments[1] (million dollars)
2833- —	**MEDICINALS AND BOTANICALS**				
	Total	**(NA)**	**4 221.9**	**(NA)**	3 732.7
28331 —	Synthetic organic medicinal chemicals, in bulk	(NA)	3 646.4	(NA)	3 101.4
28331 10	Antibiotics, including all uses such as veterinary, food supplements, food preservation, crop spraying, etc., but excluding antibiotic preparations (for detailed statistics see U.S. International Trade Commission publication, Synthetic Organic Chemicals, 1987 and 1982)	23	1 895.2	28	1 135.0
28331 20	Other synthetic organic medicinal chemicals, except antibiotics (for detailed statistics see U.S. International Trade Commission publication, Synthetic Organic Chemicals, 1987 and 1982)	41	1 742.2	49	1 958.0
28331 00	Synthetic organic medicinal chemicals, in bulk, n.s.k.	(NA)	8.9	(NA)	8.4

See footnotes at end of table.

Table 2. Product and Product Classes—Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987		1982	
		Number of companies with shipments of $100,000 or more	Value of product shipments[1] (million dollars)	Number of companies with shipments of $100,000 or more	Value of product shipments[1] (million dollars)
2833– —	**MEDICINALS AND BOTANICALS**—Con.				
28333 —	Other medicinal chemicals and botanical products, in bulk, n.e.c., including human and veterinary use, except diagnostics	(NA)	357.3	(NA)	405.0
	Botanical drugs:				
28333 15	Alkaloids, including opium and nicotine	4	25.9	5	(D)
28333 18	Other botanical drugs, including glycosides and ginseng extract	8	83.2	8	62.4
	Naturally occurring vitamins:				
28333 23	Vitamin C	8	15.2	19	25.0
28333 24	Vitamin E	9	17.8	25	108.1
28333 26	Other naturally occurring vitamins (from yeast, fish, liver, etc.)	13	18.1		
	Drugs of animal origin:				
28333 43	Hormones	1			
28333 45	Other drugs of animal origin, including dried glands, organs, and tissue, and extractions thereof	4	15.3	9	22.6
28333 62	Inorganic medicinal chemicals (except diagnostics)	4	13.4	8	14.7
	Artificial mixtures of two substances or more for therapeutic or prophylactic uses:				
28333 93	Containing vitamins, but no antibiotics	15	30.8	18	54.3
28333 94	Other, including those containing antibiotics	6	7.9	6	10.9
28333 98	Other organic medicinal chemicals, except diagnostics	13	116.1	16	69.2
28333 00	Other medicinal chemicals and botanical products, in bulk, n.e.c., including human and veterinary use, except diagnostics, n.s.k.	(NA)	33.7	(NA)	5.5
28330 —	Medicinals and botanicals, n.s.k.	(NA)	218.2	(NA)	226.3
28330 00	Medicinals and botanicals, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	101.7	(NA)	187.8
28330 02	Medicinals and botanicals, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	116.5	(NA)	38.5
2834– —	**PHARMACEUTICAL PREPARATIONS**				
	Total	**(NA)**	**26 475.1**	**(NA)**	**16 690.5**
28341 —	Pharmaceutical preparations affecting neoplasms, the endocrine system, and metabolic diseases, for human use:				
28341 00	Pharmaceutical preparations affecting neoplasms, the endocrine system, and metabolic diseases, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	1 916.8	60	1 635.1
28342 —	Pharmaceutical preparations acting on the central nervous system and the sense organs, for human use:				
28342 00	Pharmaceutical preparations acting on the central nervous system and the sense organs, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	5 596.0	110	3 758.8
28343 —	Pharmaceutical preparations acting on the cardiovascular system, for human use:				
28343 00	Pharmaceutical preparations acting on the cardiovascular system, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	3 802.4	71	1 836.6
28344 —	Pharmaceutical preparations acting on the respiratory system, for human use:				
28344 00	Pharmaceutical preparations acting on the respiratory system, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	2 654.3	93	1 588.1
28345 —	Pharmaceutical preparations acting on the digestive or the genito-urinary systems, for human use:				
28345 00	Pharmaceutical preparations acting on the digestive or the genito-urinary systems, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	2 779.2	109	1 345.5
28346 —	Pharmaceutical preparations acting on the skin, for human use:				
28346 00	Pharmaceutical preparations acting on the skin, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	1 226.5	118	824.5
28347 —	Vitamin, nutrient, and hematinic preparations, for human use:				
28347 00	Vitamin, nutrient, and hematinic preparations, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	2 612.6	119	2 103.5
28348 —	Pharmaceutical preparations affecting parasitic and infective diseases, for human use:				
28348 00	Pharmaceutical preparations affecting parasitic and infective diseases, includes antiseptic mouthwashes and rinses, for human use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	4 032.9	70	2 438.6
28349 —	Pharmaceutical preparations, for veterinary use:				
28349 00	Pharmaceutical preparations, for veterinary use (for additional detail, see Current Industrial Report MA-28G, Pharmaceutical Preparations, Except Biologicals)	(NA)	969.6	73	778.8
28340 —	Pharmaceutical preparations, n.s.k.	(NA)	834.7	(NA)	381.1
28340 00	Pharmaceutical preparations, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	510.2	(NA)	274.1
28340 02	Pharmaceutical preparations, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	324.5	(NA)	107.0

See footnotes at end of table.

Table 2. Product and Product Classes—Value of Shipments by All Producers: 1987 and 1982 —Con.

[Includes value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987		1982	
		Number of companies with shipments of $100,000 or more	Value of product shipments[1] (million dollars)	Number of companies with shipments of $100,000 or more	Value of product shipments[1] (million dollars)
2835– —	**DIAGNOSTIC SUBSTANCES**				
	Total	**(NA)**	**2 629.8**	**(NA)**	**[2] 1 321.8**
28351 —	Diagnostic substances, in vitro	(NA)	1 835.0	(NA)	(D)
	Clinical chemistry products (including toxicology):				
28351 10	Reagents	50	1 108.1	30	421.1
28351 15	Standards and controls	22	83.9	18	56.3
28351 20	Blood bank products	6	81.2	8	82.0
28351 25	Hematology products	15	85.7	10	32.8
28351 30	Coagulation products	4	(D)	8	153.7
28351 35	Microbiology, virology, serology, cytology, and histology products	29	219.8	26	176.1
28351 40	Culture media	14	108.0	20	(D)
28351 45	Other in vitro diagnostics	29	(D)		
28351 00	Diagnostic substances, in vitro, n.s.k.	–	–	–	–
28352 —	Diagnostic substances, in vivo	(NA)	679.6	(NA)	(D)
	Contrast media products (both iodinated and barium products):				
28352 10	Angiourographic agents	3	562.8	3	153.4
28352 15	All other contrast media products	8		3	(D)
28352 20	In vivo radioactive reagents (both diagnostic and therapeutic)	3	91.1	3	(D)
28352 25	Other in vivo diagnostics	4	25.7	8	(D)
28352 00	Diagnostic substances, in vivo, n.s.k.	–	–	–	–
28350 —	Diagnostic substances, n.s.k.	(NA)	106.2	(NA)	(D)
28350 00	Diagnostic substances, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	78.5	(NA)	(D)
28350 02	Diagnostic substances, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	27.7	(NA)	(D)
2836– —	**BIOLOGICAL PRODUCTS, EXCEPT DIAGNOSTIC**				
	Total	**(NA)**	**1 736.4**	**(NA)**	**[2] 1 094.7**
28361 —	Blood and blood derivatives, for human use	(NA)	578.0	(NA)	361.0
28361 15	Human blood plasma	5	572.2	11	91.6
28361 20	Other blood and blood derivatives or fractions, except those used for passive immunization	5		5	262.3
28361 00	Blood and blood derivatives, for human use, n.s.k.	(NA)	5.8	(NA)	7.1
28362 —	Vaccines, toxoids, and antigens, for human use	(NA)	432.0	6	188.0
28362 10	Vaccines for human use	8			
28362 20	Toxoids and other antigens (except allergens) for active immunization	1			
28362 00	Vaccines, toxoids, and antigens, for human use, n.s.k.	(NA)			
28363 —	Other biologics for human use	(NA)	170.7	(NA)	126.2
28363 10	Antitoxins, antivenoms, immune globulins, therapeutic immune serums, and similar blood derivatives for therapeutic use and passive immunization	5	170.7	4	81.0
28363 20	Allergenic extracts and other biologics for human use, including poison ivy and poison oak extracts, and allergens, excluding diagnostic allergens	8		11	45.2
28363 00	Other biologics for human use, n.s.k.	(NA)	–	(NA)	–
28364 —	Biological products for veterinary, industrial, and other uses	(NA)	376.4	(NA)	206.0
	Veterinary uses:				
28364 10	Veterinary vaccines (including vaccines against foot-and-mouth disease)	20	214.6	23	133.1
28364 15	Bacterins, toxoids, and other antigens (except allergens) for active immunization	9	31.5		
28364 20	Veterinary blood derivatives	1	20.1	11	41.7
28364 25	Other biologics, including antitoxins, immune serums, blood, and allergens, except diagnostics	7			
28364 30	Biological products for industrial and other uses (except culture media)	14	89.3	11	25.2
28364 00	Biological products for veterinary, industrial, and other uses, n.s.k.	(NA)	20.8	(NA)	31.2
28360 —	Biological products, except diagnostic, n.s.k.	(NA)	179.3	(NA)	[3]213.5
28360 00	Biological products, except diagnostic, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	132.4	(NA)	[3]173.9
28360 02	Biological products, except diagnostic, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	46.9	(NA)	[3]39.6

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoffs used for administrative-records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.
[2]Data for 1987 and 1982 are not wholly comparable at the four-digit product code level due to the 1987 Standard Industrial Classification which split old Industry 2831, Biological Products, into industries 2835 and 2836. Accordingly, for 1982, the "n.s.k." product codes 2835000 and 2835002 are combined with product codes 2836000 and 2836002.

Table 3. Materials Consumed by Kind: 1987 and 1982

(Includes cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text)

1987 material code	Material	1987 delivered cost (million dollars)	1982 delivered cost (million dollars)
	INDUSTRY 2833, MEDICINALS AND BOTANICALS		
	Materials, containers, and supplies	**1 421.6**	**1 095.1**
283318	Antibiotics for human and veterinary use, bulk, excluding antibiotics for animal feeds	(D)	(D)
283301	Vitamins, natural and synthetic, bulk, excluding vitamins for animal feeds	(D)	73.6
019101	Agricultural products, crude, including flowers, grains, seeds, herbs, etc.	33.6	43.5
200101	Processed food and kindred products, including lactose, meat packing plant products, yeast, etc.	6.0	35.8
283611	Blood derivatives and extenders	(D)	(D)
283306	All other medicinal and botanical drugs (in bulk, uncompounded), except antibiotics, and vitamins	(D)	73.4
289943	Gelatin (pharmaceutical grade) and gelatin capsules	(D)	2.7
281900	Industrial inorganic chemicals, including salts of sodium, calcium, etc., except medicinal	58.0	62.4
286504	Cyclic crudes and intermediates, including organic colors	58.0	56.9
346611	Metal closures and crowns for containers	.1	.7
270011	Labels, coupons, instructions, and other printed material	1.6	3.1
308008	Fabricated plastics products (including plastics closures, film, and packaging items, etc.), excluding plastics containers	(D)	(D)
	Containers:		
265001	Paperboard containers, boxes, and corrugated paperboard	8.7	11.8
322102	Glass	.3	1.5
340001	Metal	1.4	4.0
308015	Plastics	3.5	3.8
970099	All other materials and components, parts, containers, and supplies	294.1	347.4
971000	Materials, containers, and supplies, n.s.k.[1]	180.9	120.9
	INDUSTRY 2834, PHARMACEUTICAL PREPARATIONS		
	Materials, containers, supplies	**6 350.6**	**4 445.6**
283318	Antibiotics for human and veterinary use, excluding antibiotics for animal feeds	578.2	804.3
283301	Vitamins, natural and synthetic, bulk, excluding vitamins for animal feeds	280.2	277.7
019101	Agricultural products, crude, including flowers, grains, seeds, herbs, etc.	71.1	50.3
200101	Processed food and kindred products, including lactose, meat packing plant products, yeast, etc.	40.3	58.3
283611	Blood derivatives and extenders	48.3	16.8
283306	All other medicinal and botanical drugs (in bulk, uncompounded), except antibiotics, and vitamins	1 688.3	790.6
289943	Gelatin (pharmaceutical grade) and gelatin capsules	58.5	73.9
281900	Industrial inorganic chemicals, including salts of sodium, calcium, etc., except medicinals	86.3	86.9
286504	Cyclic crudes and intermediates, including organic colors	138.1	34.0
346611	Metal closures and crowns for containers	47.9	46.3
270011	Labels, coupons, instructions, and other printed material	131.5	94.6
308008	Fabricated plastics products (including plastics closures, film, and packaging items, etc.), excluding plastics containers	194.3	47.5
	Containers:		
265001	Paperboard containers, boxes, and corrugated paperboard	257.8	201.3
322102	Glass	157.3	231.7
340001	Metal	51.9	42.2
308015	Plastics	253.5	198.9
970099	All other materials and components, parts, containers, and supplies	1 467.1	969.6
971000	Materials, containers, and supplies, n.s.k.[1]	800.1	420.7
	INDUSTRY 2835, DIAGNOSTIC SUBSTANCES		
	Materials, containers, and supplies	**500.7**	**(NA)**
283318	Antibiotics for human and veterinary use, bulk, excluding antibiotics for animal feeds	2.7	(NA)
283301	Vitamins, natural and synthetic, bulk, excluding vitamins for animal feeds	(D)	(NA)
019101	Agricultural products, crude, including flowers, grains, seeds, herbs, etc.	(D)	(NA)
200101	Processed food and kindred products, including lactose, meat packing plant products, yeast, etc.	(D)	(NA)
283611	Blood derivatives and extenders	55.5	(NA)
283306	All other medicinal and botanical drugs (in bulk, uncompounded), except antibiotics, and vitamins	32.1	(NA)
289943	Gelatin (pharmaceutical grade) and gelatin capsules	(D)	(NA)
281900	Industrial inorganic chemicals, including salts of sodium, calcium, etc., except medicinal	97.7	(NA)
286504	Cyclic crudes and intermediates, including organic colors	(D)	(NA)
346611	Metal closures and crowns for containers	8.6	(NA)
270011	Labels, coupons, instructions, and other printed material	10.2	(NA)
308008	Fabricated plastics products (including plastics closures, film, and packaging items, etc.), excluding plastics containers	14.3	(NA)
	Containers:		
265001	Paperboard containers, boxes, and corrugated paperboard	11.3	(NA)
322102	Glass	26.3	(NA)
340001	Metal	.8	(NA)
308015	Plastics	11.9	(NA)
970099	All other materials and components, parts, containers, and supplies	138.9	(NA)
971000	Materials, containers, and supplies, n.s.k.[1]	66.4	(NA)
	INDUSTRY 2836, BIOLOGICAL PRODUCTS, EXCEPT DIAGNOSTIC		
	Materials, containers, and supplies	**584.1**	**(NA)**
283318	Antibiotics for human and veterinary use, bulk, excluding antibiotics for animal feeds	19.5	(NA)
283301	Vitamins, natural and synthetic, bulk, excluding vitamins for animal feeds	2.6	(NA)
283306	All other medicinal and botanical drugs (in bulk, uncompounded), except antibiotics, and vitamins	29.9	(NA)
019101	Agricultural products, crude, including flowers, grains, seeds, herbs, etc.	6.9	(NA)

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987 delivered cost (million dollars)	1982 delivered cost (million dollars)
	INDUSTRY 2836, BIOLOGICAL PRODUCTS, EXCEPT DIAGNOSTIC—Con.		
200101	Processed food and kindred products, including lactose, meat packing plant products, yeast, etc.	5.4	(NA)
283611	Blood derivatives and extenders	(D)	(NA)
289943	Gelatin (pharmaceutical grade) and gelatin capsules	(D)	(NA)
281900	Industrial inorganic chemicals, including salts of sodium, calcium, etc., except medicinal	17.2	(NA)
286504	Cyclic crudes and intermediates, including organic colors	(D)	(NA)
348611	Metal closures and crowns for containers	1.0	(NA)
270011	Labels, coupons, instructions, and other printed material	7.7	(NA)
308008	Fabricated plastics products (including plastics closures, film, and packaging items, etc.), excluding plastics containers	(D)	(NA)
	Containers:		
265001	Paperboard containers, boxes, and corrugated paperboard	15.9	(NA)
322102	Glass	15.6	(NA)
340001	Metal	.5	(NA)
308015	Plastics	19.4	(NA)
970099	All other materials and components, parts, containers, and supplies	249.2	(NA)
971000	Materials, containers, and supplies, n.s.k.[1]	81.4	(NA)

[1]Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

APPENDIX
Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies–A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees–Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers–Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., powerplant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees–Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll–Includes the gross earnings for the "employees" defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours–Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials–Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)–In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Establishments consuming less than a specified amount (usually $10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as "not specified by kind" (n.s.k.).

Value of shipments and other receipts–Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead and profit).

Shipments or production of individual products (table 2)–In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture–This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment–Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories–Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios–An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio–Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio–Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.